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Claims

[c1] A carrier for holding a workpiece, said workpiece having a central pattern area and an outer area, comprising:
a chuck plate for holding said workpiece and having at least one clamping area on a top surface thereof;
a carrier body for supporting said chuck plate;
a set of gripping members rigidly attached to said carrier body for gripping said chuck plate; and
a set of alignment members attached to said chuck plate for positioning said workpiece in a reference position relative to said chuck plate.

[c2] A carrier according to claim 1, in which said chuck plate has a central aperture penetrating to an aperture depth less than a chuck plate thickness, whereby said central aperture has a bottom surface; and
said bottom surface has an electron absorber disposed thereon.

[c3] A carrier according to claim 1, in which said at least one clamping area comprises at least one electrostatic chuck.

[c4] A carrier according to claim 2, in which said at least one clamping area comprises at least one electrostatic chuck.

[c5] A carrier according to claim 3, in which said central aperture of said chuck plate is substantially rectangular and said at least one clamping area comprises four electrostatic chucks on four sides of said top surface of said chuck plate.

[c6] A carrier according to claim 4, in which said central aperture of said chuck plate is substantially rectangular and said at least one clamping area comprises four electrostatic chucks on four sides of said top surface of said chuck plate.

[c7] A carrier according to claim 5, further comprising one electrostatic chuck on the bottom surface of said carrier body.

[c8] A carrier according to claim 6, further comprising one electrostatic chuck on the bottom surface of said carrier body.

[c9] A carrier according to claim 1, in which said gripping members for gripping said chuck plate are flexible in a vertical direction perpendicular to said workpiece; stiff in an azimuthal direction about a central point of said chuck plate and flexible in a radial direction with respect to said central point of said chuck plate.

[c10] A carrier according to claim 2, in which said gripping members for gripping said chuck plate are flexible in a vertical direction perpendicular to said workpiece; stiff in an azimuthal direction about a central point of said chuck plate and flexible in a radial direction with respect to said central point of said chuck plate.

[c11] A carrier for holding a mask, said mask having a central pattern area and an outer area, comprising:
a chuck plate for holding said mask and having at least one clamping area on a top surface thereof;
a carrier body for supporting said chuck plate;
a set of gripping members rigidly attached to said carrier base for gripping said chuck plate; and
a set of alignment members attached to said chuck plate for positioning said mask in a reference position relative to said chuck plate.

[c12] A carrier according to claim 11, in which said chuck plate has a central aperture penetrating to an aperture depth less than a chuck plate thickness, whereby said central aperture has a bottom surface; and
said bottom surface has an electron absorber disposed thereon.

[c13] A carrier according to claim 11, in which said at least one clamping area comprises at least one electrostatic

chuck.

[c14] A carrier according to claim 12, in which said at least one clamping area comprises at least one electrostatic chuck.

[c15] A carrier according to claim 13, in which said central aperture of said chuck plate is substantially rectangular and said at least one clamping area comprises four electrostatic chucks on four sides of said top surface of said chuck plate.

[c16] A carrier according to claim 14, in which said central aperture of said chuck plate is substantially rectangular and said at least one clamping area comprises four electrostatic chucks on four sides of said top surface of said chuck plate.

[c17] A carrier according to claim 15, further comprising one electrostatic chuck on the bottom surface of said carrier body.

[c18] A carrier according to claim 16, further comprising one electrostatic chuck on the bottom surface of said carrier body.

[c19] A carrier according to claim 11, in which said gripping members for gripping said chuck plate are flexible in a

vertical direction perpendicular to said mask; stiff in an azimuthal direction about a central point of said chuck plate and flexible in a radial direction with respect to said central point of said chuck plate.

[c20] A carrier according to claim 12, in which said gripping members for gripping said chuck plate are flexible in a vertical direction perpendicular to said mask; stiff in an azimuthal direction about a central point of said chuck plate and flexible in a radial direction with respect to said central point of said chuck plate.